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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,733	11/21/2001	Gregory D. Johnson	13190.101	9460

24283 7590 08/04/2004

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EXAMINER
AUGHENBAUGH, WALTER

ART UNIT	PAPER NUMBER
1772	

DATE MAILED: 08/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/993,733	JOHNSON, GREGORY D.	
	Examiner	Art Unit	
	Walter B Aughenbaugh	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12,14-20,22-28 and 39-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,14-20,22-28 and 39-42* is/are rejected.

7)☒ Claim(s) *43* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendments in claim 18 in the second Supplemental Paper filed May 17, 2004 have been received and considered by Examiner.

2. New claim 43 presented in the second Supplemental Paper filed May 17, 2004 has been received and considered by Examiner.

3. The cancellation of claim 21 in the second Supplemental Paper filed May 17, 2004 has been acknowledged by Examiner.

Claim Objections

4. Claim 43 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

WITHDRAWN REJECTIONS

5. The 35 U.S.C. 112 rejection of claim 18 made of record in paragraph 13 of the Office Action mailed February 17, 2004 has been withdrawn due to Applicant's amendments in claim 18 in the second Supplemental Paper filed May 17, 2004.

6. The 35 U.S.C. 112 rejection of claim 21 made of record in paragraph 13 of the Office Action mailed February 17, 2004 has been withdrawn due to Applicant's cancellation of claim 21 in the second Supplemental Paper filed May 17, 2004.

Claim Rejections - 35 USC § 103

7. Claims 1-12, 14-17, 22, 25-28 and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al.

In regard to claims 1 and 5, Sobolev teaches a laminate comprising two metal sheets and a plastic core between and bonded to the metal sheets (col. 36, lines 8-12). Sobolev teaches that the metal sheets are steel (col. 9, lines 27-50 and col. 19, lines 47-50). Sobolev teaches that the laminate is used as panels for concrete pouring forms (col. 3, lines 21-25 and line 60). Sobolev teaches that the total thickness of the laminate is less than 2 inches (50.8 mm) (col. 36, lines 10-14); therefore, Sobolev teaches a panel thickness of greater than 7 mm. Sobolev fails to teach that the plastic of the plastic core is high-density polyethylene.

Fitzgerald et al., however, disclose that high-density polyethylene is a plastic that has a suitable rigidity for use in concrete form mold panels (col. 2, lines 10-12 and col. 3, lines 4-15). Therefore, one of ordinary skill in the art would have recognized to have used high-density polyethylene as the plastic of the plastic core of Sobolev since high-density polyethylene is a plastic that is notoriously well known as having a suitable rigidity for use in concrete form mold panels as taught by Fitzgerald et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used high-density polyethylene as the plastic of the plastic core of Sobolev since high-density polyethylene is a plastic that is notoriously well known as having a suitable rigidity for use in concrete form mold panels as taught by Fitzgerald et al.

In regard to claims 2 and 3, Sobolev teaches a panel thickness range of 9-15 mm (claim 2) or a panel thickness value of 12 mm (claim 3) (col. 36, lines 10-14).

In regard to claim 4, Sobolev teaches that the weight of the laminate is less than about 3.5 lb./ft.^{2} (col. 4, lines 46-47). Claim 4 as amended requires that the panel weigh less than 77 lb./(8ft.*2ft.), equivalently 77 lb./16ft.^{2}, equivalently about 4.8 lb./ft.^{2}. Sobolev therefore teaches

that the panel has a density such that a panel that is 8 feet by 2 feet weighs 77 ponds or less, i.e. that the panel weighs less than about 4.8 lb./ft.^{2}.

In regard to claims 6-8, Sobolev teaches that "each metal sheet has a thickness between about 0.015 inch and about 0.1 inch" (col. 36, lines 10-11). In regard to the metal layer thickness for one of the facing or backing layers of 0.009 inch claimed in claim 6 or the metal layer thickness for one of the facing or backing layers of 0.013 inch claimed in claim 7, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the thickness of one of the facing or backing layers of Sobolev via routine experimentation, such that the thickness of one of the facing or backing layers is less than "about 0.015 inch" as specified by Sobolev as the lower end of the thickness range, in order to achieve the optimal balance of panel rigidity and minimization of metal material used depending on the particular desired end use and the required panel rigidity for the particular desired end use, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In further regard to claim 7, it is Examiner's position that 0.013 inches is "about 0.015 inch" as specified by Sobolev as the lower end of the thickness range. In regard to claim 8, the claimed thickness of "0.019 inch" falls within the bounds set by the thickness range taught by Sobolev.

In regard to claim 10, Sobolev teach that the plastic core is a foam (col. 4, lines 44-45 and col. 12, lines 3-38).

In regard to claims 11 and 12, Sobolev teach that a filler is used in the plastic (resin) core layer of the panel to lower the density of the core and that the filler is a foaming agent or blowing

agent conventionally used to foam various resins as known by those skilled in the art or glass microballoon filler having an average diameter of from about 20 microns to about 12 mm (col. 12, lines 3-16). Sobolev teaches that for lower density cores and lighter weight laminates, the microballoons and foaming agents are the preferred density lowering agents. Sobolev teach that the specific gravity of the resin core, which is equivalent to the density of the core layer, should be set in a range from about 0.8 to about 1.3. Sobolev teaches the variation of the density of the core layer via routine experimentation via control of the volume of gas per unit volume of the core layer via use of glass microballoons of a given size or of foaming agents conventionally used to foam resins known by those skilled in the art. It would have therefore been obvious to one of ordinary skill in the art at the time the invention was made to have varied the size of the microballoon filler, and therefore the "gas by volume" value of the foam plastic, or to have experimented with different foaming agents and different amounts of a given foaming agent as known by those of ordinary skilled in the art as taught by Sobolev, via routine experimentation in order to achieve the optimal "gas by volume" amount as claimed by Applicants, i.e. volume of gas per unit volume of the core layer expressed as a percentage, that achieves the desired laminate weight depending on the desired end result as taught by Sobolev, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In regard to claims 14-17, Sobolev fails to teach that the panel is bent to form a flange (as claimed in claim 14), that the flange has openings formed in it (as claimed in claim 15), that the panel is notched at the bend (as claimed in claim 16) or that the bend is a 90° bend (as claimed in

claim 17). Fitzgerald et al., however, disclose a panel with V-shaped cross sections 20 and 22 (i.e. notches) where the panel is bent 90° to form a mold with side walls (i.e. flanges) 12 and 14 (col. 3, lines 9-29 and Figures 1, 2 and 6). Fitzgerald et al. disclose openings 42 and 44 formed in flange 12 and openings 46 and 48 formed in flange 14 for removable pins to assure maintaining the assembled state of the mold (col. 3, lines 53-60 and Figures 2 and 6). Therefore, one of ordinary skill in the art would have recognized to have provided a 90° bend in the panel of Sobolev via a notch in order to form a flange and to further provide openings in the flange, since it is notorously well known in the art to bend concrete form mold panels via a notch and to provide openings in the resulting flanges in order to assure maintaining the assembled state of the mold via pins as taught by Fitzgerald et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a 90° bend in the panel of Sobolev via a notch in order to form a flange and to further provide openings in the flange, since it is notorously well known in the art to bend concrete form mold panels via a notch and to provide openings in the resulting flanges in order to assure maintaining the assembled state of the mold via pins as taught by Fitzgerald et al.

In regard to claim 22, Sobolev teaches that the facing has a recessed and a raised portion forming a design (see Fig. 8A, as can been seen most readily at the bottom left-hand corner of Fig. 8A- the metal facing layer is clearly contoured and there is therefore a recessed and a raised portion forming a design. The recitation that the design is "to be impressed in concrete" is an intended use limitation and has therefore been given little patentable weight. Concrete would nonetheless be impressed in the panel having a recessed and a raised portion forming a design

shown in Figure 8A since Sobolev teaches that the panel is used as a concrete formwork panel (col. 3, lines 47-62).

In regard to claim 25, Sobolev teaches that the metal layers are bonded to the plastic core with an adhesive (col. 31, lines 39-40).

In regard to claim 26, Sobolev teaches that it is common to join several laminate panels to produce a larger continuous panel (col. 33, lines 23-25), and that conventional rivets or other types of mechanical fasteners are used to fasten the plurality of panels together (col. 33, lines 56-57).

In regard to claims 27 and 28, Sobolev teaches that the panels are fastened to a steel or aluminum frame (col. 2, lines 23-26 and col. 33, lines 66-68).

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. and in further view of Toedter.

Sobolev and Fitzgerald et al. teach the concrete formwork panel as discussed in paragraph 16 of Paper 5. Fitzgerald et al. further teaches that the panel includes a panel end and is bent twice to form a first bend and a second bend (see Figures 1, 2 and 6).

Sobolev and Fitzgerald et al fail to teach that the second bend is closer to the panel end than the first bend and that the second bend is substantially 180° so that the panel is bent back on itself to form a double-thick flange.

Toedter, however, discloses a panel (work sheet, item 200) that is bent back on itself to form a double-thick panel (col. 3, lines 21-39 and Fig. 1, 8 and 10). Toedter discloses that the panel is bent back on itself via grooves (items 222 and 223), that are structurally equivalent to the grooves (items 20 and 22) of Fitzgerald et al., to form the second bend that is substantially

180° as claimed by Applicant (col. 3, line 41-col. 4, line 40) and to form the double-thick flange as claimed by Applicant. The structure taught by Toedter that is equivalent to the second bend claimed by Applicant is closer to the panel end (free edge surface, item 3252, Fig. 4, col. 6, lines 62-63) than the first bend that is made at grooves 220 and 221 as shown in Fig. 11. Toedter discloses that this panel structure results in a building element that has, weight for weight, a greater resistance to crush and shear exerting forces than other known building elements (col. 1, lines 47-65).

Therefore, one of ordinary skill in the art would have recognized to have formed the flange (items 12 or 14) of Fitzgerald et al. such that the second bend of the flange (item 12 or 14) is closer to the panel end than the first bend and such that the second bend is substantially 180° so that the panel is bent back on itself to form a double-thick flange since it is notoriously well known to form double-thick building elements with two bends wherein the second bend is closer to the end of the building element than the first bend and the second bend is substantially 180° so that the element is bent back on itself to form a double-thick building element in order to enhance the resistance to crush and shear exerting forces of the building element as taught by Toedter.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the flange (items 12 or 14) of Fitzgerald et al. such that the second bend of the flange (item 12 or 14) is closer to the panel end than the first bend and such that the second bend is substantially 180° so that the panel is bent back on itself to form a double-thick flange since it is notoriously well known to form double-thick building elements with two bends wherein the second bend is closer to the end of the building element than the first bend and the

second bend is substantially 180° so that the element is bent back on itself to form a double-thick building element in order to enhance the resistance to crush and shear exerting forces of the building element as taught by Toedter.

9. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. and in further view of Lee.

Sobolev and Fitzgerald et al. teach the concrete formwork panel as discussed above. Sobolev and Fitzgerald et al. fail to teach that the panel is bent into a hollow, columnar form (as claimed in claim 19) where the columnar form is cylindrical (as claimed in claim 20). Lee, however, teach a building panel in a form for building columns, where the core is cylindrical (col. 2, lines 60-65). Therefore, one of ordinary skill in the art would have recognized to have bent the panel of Sobolev and Fitzgerald et al. into a hollow columnar form where the columnar form is cylindrical, since it is notoriously well known to bend panels into columnar and cylindrical form in order to use the panels to build columns as taught by Lee.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have bent the panel of Sobolev and Fitzgerald et al. into a hollow columnar form where the columnar form is cylindrical, since it is notoriously well known to bend panels into columnar and cylindrical form in order to use the panels to build columns as taught by Lee.

10. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. and in further view of Yoshida et al.

Sobolev and Fitzgerald et al. teach the concrete formwork panel as discussed above. Sobolev and Fitzgerald et al. fail to teach that the panel includes a strengthening rib attached to the metal backing layer. Yoshida et al., however, disclose a concrete formwork provided with a

plurality of small ribs to strengthen the plate of the formwork (col. 2, lines 48-51). Therefore, one of ordinary skill in the art would have recognized to have attached a strengthening rib to the metal backing layer of the panel of Sobolev and Fitzgerald et al. in order to strengthen the panel as taught by Yoshida et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have attached a strengthening rib to the metal backing layer of the panel of Sobolev and Fitzgerald et al. in order to strengthen the panel as taught by Yoshida et al.

11. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev in view of Fitzgerald et al. and in further view of Gallis et al.

Sobolev and Fitzgerald et al. teaches the concrete formwork panel as discussed above. Sobolev and Fitzgerald et al. fail to teach that the panel includes a strengthening rib attached to the metal backing layer as claimed in claim 23 including a handhold as claimed in claim 24. Gallis et al., however, disclose a concrete wall form assembly having two modular units, each of which consists of stiffening ribs 16a-c for the modular unit 11a and stiffening ribs 16d-f for modular unit 11b (col. 2, lines 41-51 and Figure 1). Gallis et al. disclose that modular units 11a and 11b are provided with a pair of handles 19 which facilitates lifting of the complete unit during erection and dismantling, and that the handles 19 are fixed to the second and sixth ribs of each unit (col. 2, lines 62-67). Therefore, one of ordinary skill in the art would have recognized to have attached a strengthening rib to the metal backing layer of the panel of Sobolev and Fitzgerald et al. in order to strengthen (i.e. stiffen) the panel as taught by Gallis et al., and to have provided a handhold such as the handles of Gallis et al. in order to facilitate lifting of the form assembly during erection and dismantling as taught by Gallis et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have attached a strengthening rib to the metal backing layer of the panel of Sobolev and Fitzgerald et al. in order to strengthen (i.e. stiffen) the panel as taught by Gallis et al., and to have provided a handhold such as the handles of Gallis et al. in order to facilitate lifting of the form assembly during erection and dismantling as taught by Gallis et al.

12. Claims 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev.

In regard to claim 39, Sobolev teaches a laminate comprising two metal sheets and a plastic core between and bonded to the metal sheets (col. 36, lines 8-12). Sobolev teaches that the laminate is used as panels for concrete pouring forms (col. 3, lines 21-25 and line 60). Sobolev teaches that the plastic core is a foam (col. 4, lines 44-45 and col. 12, lines 3-38). Sobolev fails to explicitly teach that the foam plastic is 32% or more gas, by volume (as claimed in claim 39), or 40% or more gas, by volume (as claimed in claim 40) or 50% or more gas, by volume (as claimed in claim 41). However, Sobolev teach that a filler is used in the plastic (resin) core layer of the panel to lower the density of the core and that the filler is a foaming agent or blowing agent conventionally used to foam various resins as known by those skilled in the art or glass microballoon filler having an average diameter of from about 20 microns to about 12 mm (col. 12, lines 3-16). Sobolev teaches that for lower density cores and lighter weight laminates, the microballoons and foaming agents are the preferred density lowering agents. Sobolev teach that the specific gravity of the resin core, which is equivalent to the density of the core layer, should be set in a range from about 0.8 to about 1.3. Sobolev teaches the variation of the density of the core layer via routine experimentation via control of the volume of gas per unit volume of the core layer via use of glass microballoons of a given size or of foaming agents

conventionally used to foam resins known by those skilled in the art. It would have therefore been obvious to one of ordinary skill in the art at the time the invention was made to have varied the size of the microballoon filler, and therefore the "gas by volume" value of the foam plastic, or to have experimented with different foaming agents and different amounts of a given foaming agent as known by those of ordinary skilled in the art as taught by Sobolev, via routine experimentation in order to achieve the optimal "gas by volume" amount as claimed by Applicants, i.e. volume of gas per unit volume of the core layer expressed as a percentage, that achieves the desired laminate weight depending on the desired end result as taught by Sobolev, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

13. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sobolev and in further view of Fitzgerald et al.

Sobolev teaches the concrete formwork panel as discussed above. Sobolev fails to teach that the plastic of the plastic core is high-density polyethylene. Fitzgerald et al., however, disclose that high-density polyethylene is a plastic that has a suitable rigidity for use in concrete form mold panels (col. 2, lines 10-12 and col. 3, lines 4-15). Therefore, one of ordinary skill in the art would have recognized to have used high-density polyethylene as the plastic of the plastic core of Sobolev since high-density polyethylene is a plastic that is notoriously well known as having a suitable rigidity for use in concrete form mold panels as taught by Fitzgerald et al. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used high-density polyethylene as the plastic of the plastic core of Sobolev since high-

density polyethylene is a plastic that is notoriously well known as having a suitable rigidity for use in concrete form mold panels as taught by Fitzgerald et al.

RESPONSE TO FEBRUARY 2, 2004 DECLARATION

14. The "Supplemental Declaration of Edward Rahe" signed February 2, 2004 has been received and considered by Examiner.

In paragraphs 5-7 of his Supplemental Declaration, Mr. Rahe addresses the statement made on page 6 of the Advisory Action (Paper 9) that "the "HDO" panels aren't described as being the closest prior art which is commensurate in scope with the claims" (see MPEP 716.02b). The nature of the "HDO" panels (what material or materials the HDO panel of formed from) is not disclosed in Mr. Rahe's first Declaration: from what is stated in paragraphs 5 and 6 of the Supp. Dec., it seems that the HDO panel is not "made of a metal/plastic laminate". The "closest prior art which is commensurate in scope with the claims" is the panel obtained from the proposed modification of the Sobolev panel as made of record in the 35 U.S.C. 103 rejection of claims 1-12, 14-17, 22, 25-28 and 39-42 (paragraph 16 of Paper 5). If this is not attainable, the panel taught by Sobolev would be the closest prior art; Sobolev explicitly teaches a panel for concrete pouring forms having all of the limitations claimed in claim 1 except that the plastic core is high density polyethylene (HDPE) as made of record in paragraph 16 of Paper 5 (i.e. Sobolev does not explicitly teach that the plastic core is HDPE). Note that the teachings of Sobolev do not exclude HDPE from the scope of materials for the resin core. An effective Declaration would present data that proves that the claimed steel/HDPE/metal laminate provides unexpected results over those of the steel/resin/metal laminate taught by Sobolev.

The German ½" panel that is introduced in paragraphs 8 and 9 of the Supp. Dec. is not the closest prior art which is commensurate in scope with the claims because the panel does not include steel. In response to the statement that "I consider the German ½ panel as the closest prior art", the German ½" panel is not the closest prior art which is commensurate in scope with the claims as set forth in MPEP 716.02(b).

In response to the statement in paragraph 14 of the Supp. Dec. that "10% is a significant difference to one skilled in the art of concrete formwork panels", the 10% difference is a difference in plywood deflection between the German ½" aluminum/ "epoxy-type plastic" and a 3/8" steel/HDPE/metal laminate of the invention (the McCormick 3/8" panel is supposedly a steel/HDPE/metal laminate since this structure is claimed as the invention). While "10% is a significant difference to one skilled in the art of concrete formwork panels" as is stated in paragraph 14 of the Supp. Dec., this difference is irrelevant to the instant application since the McCormick panel is not being compared with the closest prior art which is commensurate in scope with the claims as discussed above; Sobolev teaches a steel/resin/metal laminate. Furthermore, it is notoriously well known to those familiar with the mechanical properties of metals that steel is a much stiffer metal than aluminum (see, e.g., col. 6, lines 3-14 of US Patent No. 4,193,367 to Benincasa et al.), so it would not be unexpected to one of ordinary skill in the art to see that a steel/HDPE/metal laminate panel deflects less than an aluminum/ "epoxy-type plastic" laminate panel when both panels are subjected to a standard deflection test.

That the 25% difference in deflection values between steel/HDPE/metal laminate panel and the aluminum/ "epoxy-type plastic" laminate panel where both panels are of equal thickness is "really amazing" (paragraphs 15 and 16 of Supp. Dec.) is irrelevant to the instant application

since the McCormick panel is not being compared with the closest prior art which is commensurate in scope with the claims as discussed above; Sobolev teaches a steel/resin/metal laminate. It would not be unexpected to one of ordinary skill in the art to see that a steel/HDPE/metal laminate panel deflects less than an aluminum/ "epoxy-type plastic" laminate panel when both panels are subjected to a standard deflection test as discussed above.

That "Solid plastic panels like the Fitzgerald et al. panel could be considered only as throw-away panels, at the very best" (paragraph 17 of Supp. Dec.) is irrelevant because the claims are not rejected under 35 U.S.C. 102 as being anticipated by Fitzgerald et al.

That "the Fitzgerald et al. device is a mold, not a formwork" (paragraphs 18 and 19 of Supp. Dec.) is irrelevant because the claims are not rejected under 35 U.S.C. 102 as being anticipated by Fitzgerald et al.; Sobolev teaches a panel for concrete pouring forms (i.e. a concrete formwork panel).

Applicant misrepresents Examiner's position provided on pages 2-4 of Paper 9 in paragraph 22 of the Supp. Dec. in stating that Examiner argues that "one skilled in the art would reason that if a steel panel were made with the 'slightly more flexible epoxy resin mixture' it would work. This was not stated or implied in Paper 9. The 9^{th}-14^{th} lines of page 3 of Paper 9 state that "absolutely nothing can be inferred from Sobolev's teachings as to which metal (steel or aluminum) is the superior material in terms of core cracking" because Sobolev does not report a test with a panel comprising steel and the "slightly more flexible epoxy resin". The point is that Sobolev teaches that "steel/plastic panels" perform equally as well as "aluminum/plastic panels" as discussed on pages 2-4 of Paper 9; therefore, one of ordinary skill in the art would be led to pursue "steel/plastic panels" as much as "aluminum/plastic panels" based on the teachings of

Sobolev discussed in pages 2-4 of Paper 9. In paragraph 23 of the Supp. Dec., Mr. Rahe states that he "would assume" that Sobolev "did not include the steel laminate with the 'slightly more flexible epoxy resin mixture' because it did not work", but it could just as well be that it simply was not tested.

In regard to the statement regarding "slight cracking" made in paragraph 24 of the Supp. Dec., the "slight cracking" taught by Sobolev pertains to the epoxy resin mixture of Sobolev. The rejection of record proposes using HDPE as the resin taught by Sobolev (which is not limited to a certain composition). Provided the proposed combination of references of record, that slight cracking occurs in the epoxy resin mixture of Sobolev is irrelevant to the facts of this case because Applicant does not claim an epoxy as the material of the core.

In paragraph 27 of the Supp. Dec., it is stated that the statement from Sobolev provided in paragraph 26 "suggests, that core density reductions of greater than 30% do result in loss of important laminate properties". Sobolev's statement does not suggest this; all this says is that core density reductions of up to 30% do not result in loss of important laminate properties. Nothing can be inferred from this teaching about laminate properties of Sobolev laminates having a core density reduction of greater than 30%. It is stated that the phrase "in some cases" "tells" Mr. Rahe that "in the majority of cases, core density reductions of 30% resulted in loss of lamination properties", but again, nothing can be inferred from this teaching about laminate properties of Sobolev laminates having a core density reduction of greater than 30%.

In paragraph 29 of the Supp. Dec., it is stated that "it would take years to experiment as the Examiner suggests to determine an optimal value of gas by volume", but the amount of time it takes to develop a product is irrelevant.

ANSWERS TO APPLICANT'S ARGUMENTS

15. Applicant's arguments on pages 6-7 of the Remarks section of the Supplemental Paper filed May 17, 2004 regarding the 35 U.S.C. 103 rejection of claim 18 have been fully considered but are not persuasive. Applicant's statement that "resistance to crush is not a problem, since the single-thickness panel is sufficiently crush resistant" is unsupported. One of ordinary skill in the art would have recognized to have formed the panel as claimed in claim 18 in order to improve the crush resistance of the panel as taught by Toedter.

16. Applicant's arguments on pages 6-11 of the Remarks section of the Supplemental Paper filed February 12, 2004 regarding the 35 U.S.C. 103 rejection of claims 1-12, 14-17, 22, 25-28 and 39-42 have been fully considered but are not persuasive.

Applicant states the metal/plastic laminate that is included in Exhibit C is the closest prior art, but it is not the closest prior art for the reasons provided in the Response to the Supp. Dec. section of this Office Action. Applicant argues that if Exhibit C does not include the panel of Sobolev, "the only conclusion is that the panel of Sobolev was never used as a concrete formwork panel", but (1) 35 U.S.C. 102 rejection as being anticipated by Sobolev is not of record and (2) Sobolev teaches a panel for concrete pouring forms (i.e. a concrete formwork panel). The effectiveness of the data presented in Exhibit C was addressed in the Response to the Supp. Dec. section of this Office Action.

Applicant argues that "the disclosure of steel is minimal", but this argument is irrelevant; Sobolev discloses steel as a suitable material for the facing layer. Applicant misrepresents Examiner's position provided on pages 2-4 of Paper 9 on page 7 of the Supplemental Paper wherein it is not "suggest[ed] that a steel panel made with a 'slightly more flexible epoxy resin'

would not fail" as Applicant alleges. The 9th-14th lines of page 3 of Paper 9 state that "absolutely nothing can be inferred from Sobolev's teachings as to which metal (steel or aluminum) is the superior material in terms of core cracking" because Sobolev does not report a test with a panel comprising steel and the "slightly more flexible epoxy resin": this is not a suggestion that "a steel panel made with a 'slightly more flexible epoxy resin' would not fail" as Applicant alleges is suggested. The point is that Sobolev teaches that "steel/plastic panels" perform equally as well as "aluminum/plastic panels" as discussed on pages 2-4 of Paper 9; therefore, one of ordinary skill in the art would be led to pursue "steel/plastic panels" as much as "aluminum/plastic panels" based on the teachings of Sobolev discussed in pages 2-4 of Paper 9. The argument regarding the "slight cracking" teaching is irrelevant as explained in the Response to the Supp. Dec. section of this Office Action.

Applicant argues that one of ordinary skill in the art would not have been motivated to combine Sobolev and Fitzgerald et al. since "Fitzgerald et al. does not disclose a concrete formwork panel but a mold", but as made of record in at least paragraph 16 of Paper 5, Fitzgerald et al. discloses that HDPE is a material of suitable rigidity for use in concrete form mold panels (col. 2, lines 10-12 and col. 3, lines 4-15), so one of ordinary skill in the art of panels used for construction with concrete would be familiar with HDPE as a suitable plastic for panels.

Applicant argues that *In re Boesch* does not apply to the instant case because "the values claimed are outside the ranges in the prior art", but as stated in previous Office Actions, the 30% value mentioned by Sobolev is not an endpoint of a range as presented by Sobolev.

In regard to Applicant's arguments on pages 10-11 of the Supplemental Paper regarding the rejection of claims 39-41, Applicant argues that Examiner's statement initially made in Paper 9 that Sobolev teaches variation of the volume of gas per unit volume of the core layer is not true. However, the teaching of Sobolev that Applicant cites is not relied upon in the rejection made of record in paragraph 21 of Paper 5; the teaching that Applicant cites, that is at col. 22, lines 13-15, is not cited in paragraph 21 of Paper 5. The basis for Examiner's statement that Sobolev teaches variation of the volume of gas per unit volume of the core layer is provided in paragraph 21 of Paper 5 and is reproduced below (Applicant has not addressed the subject matter in the text of paragraph 21 of Paper 5):

> However, Sobolev teach that a filler is used in the plastic (resin) core layer of the panel to lower the density of the core and that the filler is a foaming agent or blowing agent conventionally used to foam various resins as known by those skilled in the art or glass microballoon filler having an average diameter of from about 20 microns to about 12 mm (col. 12, lines 3-16). Sobolev teaches that for lower density cores and lighter weight laminates, the microballoons and foaming agents are the preferred density lowering agents. Sobolev teach that the specific gravity of the resin core, which is equivalent to the density of the core layer, should be set in a range from about 0.8 to about 1.3. Sobolev teaches the variation of the density of the core layer via routine experimentation via control of the volume of gas per unit volume of the core layer via use of glass microballoons of a given size or of foaming agents conventionally used to foam resins known by those skilled in the art. It would have therefore been obvious to one of ordinary skill in the art at the time the invention was made to have varied the size of the microballoon filler, and therefore the "gas by volume" value of the foam plastic, or to have experimented with different foaming agents and different amounts of a given foaming agent as known by those of ordinary skilled in the art as taught by Sobolev, via routine experimentation in order to achieve the optimal "gas by volume" amount as claimed by Applicants, i.e. volume of gas per unit volume of the core layer expressed as a percentage, that achieves the desired laminate weight depending on the desired end result as taught by Sobolev, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

The statement "In a number of cases, core density reductions of 30% were readily achieved without loss of important laminate properties" (col. 22, lines 22) does not necessarily "indicate[] that, in the majority of cases, important laminate properties were lost" as Applicant argues and does not necessarily "impl[y] that, in the range above the core reductions of 30%, important

laminate properties were lost in all cases" as Applicant argues. The comments made in the Supp. Dec. that are discussed in the paragraph bridging pages 10 and 11 of the Supplemental Paper have been addressed above in the Response to the Supp. Dec. section of this Office Action.

17. Applicant's arguments regarding the 35 U.S.C. 103 rejection of claim 18 made of record in Paper 5 have been fully considered but are not persuasive. As made of record in paragraph 17 of Paper 5, Fitzgerald et al. teaches a flange, and one of ordinary skill in the art would have recognized to have formed the flange of Fitzgerald et al. such that it has the structure that is taught by Toedter.

18. Applicant's arguments regarding the 35 U.S.C. 103 rejection of claims 19 and 20 made of record in Paper 5 have been fully considered but are not persuasive. As made of record in paragraph 18 of Paper 5, Lee teaches a cylindrical panel, and one of ordinary skill in the art would have recognized to have formed the panel of Sobolev and Fitzgerald et al. in the shape taught by Lee.

19. Applicant's arguments regarding the 35 U.S.C. 103 rejection of claim 23 made of record in Paper 5 have been fully considered but are not persuasive. As made of record in paragraph 19 of Paper 5, since Yoshida et al. disclose a concrete formwork provided with a plurality of ribs to strengthen the plate of the formwork, one of ordinary skill in the art would have recognized to have attached a strengthening rib to the metal backing layer of the panel of Sobolev and Fitzgerald et al. in order to strengthen the panel as taught by Yoshida et al.

20. Applicant's arguments regarding the 35 U.S.C. 103 rejection of claims 23 and 24 made of record in Paper 5 have been fully considered but are not persuasive. Applicant's arguments

depend entirely on the arguments against the 35 U.S.C. 103 rejection of claims 1-12, 14-17, 22, 25-28 and 39-42 made of record in Paper 5 that have been addressed above.

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is 571-272-1488. The examiner can normally be reached on Monday-Thursday from 9:00am to 6:00pm and on alternate Fridays from 9:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter B. Aughenbaugh
07/30/04
WBA

HAROLD PYON
SUPERVISORY PATENT EXAMINER 8/3/04
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